

CM What is claimed is:

Sub a1 1. A developing sleeve for a magnetic brush developing unit, which rotates to carry a magnetic brush formed from developer consisting of carrier and toner while forming said magnetic brush on the circumferential surface thereof, so as to develop an electrostatic latent image on a photosensitive drum with said toner in a developing area where said magnetic brush comes into contact with said photosensitive drum and a predetermined electric field is applied,

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20 wherein said developing sleeve comprises a plurality of axially parallel grooves formed at a predetermined pitch in the circumferential direction on the circumferential surface thereof, each groove and each interfacing portion having a cross section gradually and gently curved in the circumferential direction, said interfacing portion being a portion between each groove and its adjacent circumferential surface area.

25 2. A developing sleeve according to claim 1, wherein said grooves and circumferential surface areas between two adjacent grooves are formed in a sine curve in section.

Sub a2 30 3. A developing sleeve according to claim 1, wherein each of said grooves is substantially formed in a V-shape with an arc-shaped bottom in section and said interfacing portion between each groove and its adjacent circumferential surface area has an arc-shaped cross section gradually and gently curving in the

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circumferential direction.

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cont
5 4. A developing sleeve for a magnetic brush developing unit, which rotates to carry a magnetic brush formed from developer consisting of carrier and toner while forming said magnetic brush on the circumferential surface thereof, so as to develop an electrostatic latent image on a photosensitive drum with said toner in a developing area where said magnetic brush comes into contact with said photosensitive drum and a predetermined electric field is applied, said photosensitive drum rotating at such a speed that the surface thereof moves slower than that of said developing sleeve,

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15 wherein said developing sleeve comprises a plurality of axially parallel grooves formed at a predetermined pitch in the circumferential direction on the circumferential surface thereof, said pitch being equal to or smaller than the circumferential length of said developing area and also being equal to or larger than the difference in travel length between the surface of said developing sleeve and that of the photosensitive drum during the time required for a point on the photosensitive drum to move along the full length of said developing area.

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30 4. A developing sleeve according to claim 3, wherein each of said grooves is provided with angular corners in section.

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5. A developing sleeve according to claim 3, wherein
 B each of said grooves and ^athe interfacing portion
 between each groove and its adjacent circumferential
 surface area curve gradually and gently in section in
 5 the circumferential direction of said developing
 sleeve.

6. A developing sleeve according to claim 3, wherein
 said grooves are so arranged as to satisfy the
 10 following relation:

$$C \times S/D \geq A$$

wherein S is the speed at which the surface
 of said developing sleeve moves, D is the speed at
 15 which ^athe surface of said photosensitive drum moves, A
 is the pitch at which said grooves are disposed, and C
 is the circumferential length of ^asaid circumferential
 surface area between two adjacent grooves.

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